



Fraser River Estuary Management Program

OVERVIEW STUDY

Environmental Emergency Activity

Environmental Emergencies Activity Program
June, 1991



Government
of Canada

Gouvernement
du Canada



Province of
British Columbia

OVERVIEW STUDY

**FRASER RIVER ESTUARY
MANAGEMENT PROGRAM**

ENVIRONMENTAL EMERGENCY ACTIVITY

PREPARED FOR:

**FRASER RIVER ESTUARY
MANAGEMENT PROGRAM**

ENVIRONMENTAL EMERGENCY ACTIVITY

PREPARED BY:

BENNETT ENVIRONMENTAL CONSULTANTS LTD.

JUNE, 1991

Prepared for:

**FRASER RIVER ESTUARY MANAGEMENT PROGRAM
ENVIRONMENTAL EMERGENCY ACTIVITY WORKING GROUP**

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SUMMARY

This report examines the accomplishments of the Environmental Emergency Activity of the Fraser River Estuary Management Program. These accomplishments will be regarded with respect to: the Terms of Reference for the activity, two large spill events on the west coast of North America, and the influence of these events on the progress of the activity. Prior to 1985 the issue of spill response was not a specific priority for many of the agencies with jurisdiction on the Fraser River Estuary. An initial challenge facing the activity was to bring greater attention to the need for coordinated, fast, efficient spill response on the estuary. Oil spills from the *Nestucca* and *Exxon Valdez* punctuated this need. As a result of these spills, many agencies have focused their attention and resources on the issue. As a further result attention was drawn away from the working group in the knowledge that what ever improvements could be achieved in the wider sphere would also have applications in the estuary that will enhance preparedness.

An early goal for the activity was to develop an estuary wide spill contingency plan. This was not achieved. However, the activity was successful in improving spill responsiveness and preparedness; the basic elements of such a plan. These improvements can be summarized as follows:

- The activity established that a great deal of improvement is necessary in terms of interagency linkages. These are presently taking place as a result of the Brander-Smith and Anderson reviews of tanker safety and oil spill preparedness;
- The activity was instrumental in establishing a spill response equipment cache which is designed specifically for a river environment and in persuading the Canadian Coast Guard and the Petroleum Industry to acquire compatible equipment;
- Work on the activity resulted in improved communications between individual agencies and in the linkages between these agencies.

This report makes recommendations in Section 9 under four headings: Planning, Response Preparedness, Public Involvement, and General. Many important steps towards greater preparedness were taken and these should not be lost through inactivity. This report identifies the need for greater spill preparedness and prevention and recommends that the activity continue in some form.

LIST OF ABBREVIATIONS

BCPA	British Columbia Petroleum Association (now CCPI)
CCG	Canadian Coast Guard
CCPI	Canadian Council of Petroleum Industries
CCME	Canadian Council of Ministers of Environment
CCREM	Canadian Council of Resource and Environment Ministers (now CCME)
DFO	Department of Fisheries and Oceans (Canada)
EEA	Environmental Emergency Activity
EMA	Emergency Management Activity
EPS	Environmental Protection Service
FREMP	Fraser River Estuary Management Program
FRHC	Fraser River Harbour Commission
GIS	Geographic Information System
GVRD	Greater Vancouver Regional District
IOS	Institute of Ocean Sciences
MOE	Ministry of Environment (BC)
NFHC	North Fraser Harbour Commission
PEP	Provincial Emergency Program
REPC	Regional Emergency Planning Committee
TOR	Terms of Reference
WMB	Waste Management Branch

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1.0 INTRODUCTION

1.1 BACKGROUND

The Environmental Emergency Activity Group (EEA) was established in 1985 as a part of the Fraser River Estuary Management Program (FREMP) Implementation Strategy. At that time it was known as the Emergency Management Activity (EMA). Appendix 1 contains the terms of reference for the EMA. This activity was meant to address both natural and human induced emergencies. In June 1986, the defacto beginning of the EEA, committee members agreed to split work for the EMA into two groups: one is the Environmental Emergency Activity chaired by Environment Canada, the other is the Civil Emergency Activity, led by the British Columbia Provincial Emergency Program.

1.2 PURPOSE AND METHODS

As stated in the terms of reference of this overview study: **the purpose of this study is "to prepare a written overview of the Environmental Emergency Activity, identify its success and failures and to recommend means by which further improvements can be made to better protect the estuary from oil and hazardous material spills"**. This has been accomplished through review of the correspondence and literature generated over the course of the activity as well as through interviews with the participants and other individuals. Appendix 2 lists the persons interviewed as well as literature which was reviewed for this report. From EEA's terms of reference, the correspondence, and literature generated over its five years, a chronology of progress was developed (Appendix 3 - the column labelled "comments" very briefly describes the outcome of an initiative or notes some outside forces which influenced the activity's progress).

Of particular significance is the Discussion Paper which was submitted as a final draft in May 1987. It identified three objectives:

- Development of revised interagency agreements including municipal commitment leading to the development of a Fraser River Estuary Contingency plan;

- Development of an estuary spill equipment depot and spill cooperative and a spill exercise to test the contingency plan and the new equipment; and
- A contingency funding study.

This report will describe the outcome of each of these objectives. Progress of two other initiatives, a drift study and environmental protection guidelines will be also examined.

Events of Canadian, North American and global significance affected the EEA. These events were the *Nestucca* spill and the spill from the *Exxon Valdez*. These two events proved to be both a distractive influence on EEA progress but a positive influence on environmental emergency management in general. The progress of the EEA will be examined in light of these positive and negative influences. Recommendations are made which build on the accomplishments of the EEA and take advantage of current heightened awareness, towards preparedness, response and prevention of hazardous material spills.

2.0 EMERGENCY RESPONSE PLAN FOR THE FRASER RIVER ESTUARY

"The panel recommends that the North Fraser Harbour Commission work with FREMP and other agencies to develop an estuary-wide response plan which includes a clearly defined chain-of-command for responding to accidents such as spills, fires and other incidents."

The above quote appears as a recommendation of the Federal Environmental Assessment Review Office in the report on the Sea Island Fuel Barge Facility. The notion of an area wide contingency plan could be seen as a suitable means to fulfil the objectives as outlined in the EEA's TOR. Indeed, an area wide contingency plan for the estuary was considered to be "the logical culmination of the working group's efforts". This notion would also fit in well with the overall objectives for FREMP.

The first priority in developing a contingency plan is to establish specific agency (or individual) responsibilities. The work plan identifies revision of interagency agreements, with specific inclusion of the municipalities, as a preliminary step in developing a contingency plan. However, consensus on the need for developing a new agreement was never reached. In order to clarify and coordinate individual agency roles the EEA engaged a consultant. The scope of work included analysis of all of the contingency plans which apply to the estuary and to determine the quality and level of the linkages. The final report was submitted in April, 1989. The report makes several recommendations. Specifically, it notes that:

"...the linkages which are of interest to this study are not reflected in the plans received. The only linkages of note are formalized agreements between the Governments of Canada and British Columbia, and between Environment Canada and the Canadian Coast Guard. Their broad geographic coverage is of limited operational applicability to the Fraser Estuary."

Once again, the problem of inadequate interagency agreements and liaison (linkages) is iterated. If an estuary wide agreement could be developed, which specified expectations and jurisdiction, a full scale contingency plan could be possible. The plan should go beyond simply providing a call out list and also include such things as locations of equipment, information on spill modelling, and sensitivity information. An agreement would provide the template for such a plan.

3.0 FRASER RIVER ESTUARY SPILL EQUIPMENT DEPOT AND SPILL RESPONSE COOPERATIVE

The EEA identified the need for dedicated spill response equipment for the estuary in the discussion paper. This equipment would need to be specialized to suit a riverine/ estuarine environment. The paper also noted that while complete control of a spill of a floating product is highly unlikely, especially in the river, response equipment could be used to limit environmental damage through partial control and defensive action. Prior to 1986, there was no equipment specifically for the estuary. None of the existing depots (CCG at Sea Island, Burrard Clean in Burrard Inlet) possessed any equipment specifically designed for river use. With equipment being relatively remote and not very useful in this environment response was difficult at the best of times. The first goal of the EEA was to convince participants that response was not useless but indeed necessary. To follow from this was the obvious need to establish an equipment depot and a spill response cooperative specifically for the estuary. CCPI, CCG, FRHC and the NFHC were asked to participate in the establishment of a depot and a cooperative. A consultant was engaged to recommend a suitable equipment package for such a depot and a possible training program to compliment it.

A cooperative was not established. However, the FRHC has purchased an equipment trailer and has established it as a depot on Annacis Island. As per the recommendations of the consultants study, Burrard Clean has established a similar trailer to be stored with (or near) the FRHC equipment cache. FRHC is participating in training programs with Burrard Clean. The CCG has upgraded their Sea Island equipment cache to include river boom, and there are plans to obtain a barge. It is important to note that although a Fraser Estuary Cooperative was not created, the equipment acquired by each party is completely compatible and can be used in cooperation. The NFHC has had discussions with the CCG for the purchase and maintenance of equipment. It is the position of the NFHC that the cache at Sea Island better suits NFHC interests. So far, the NFHC has not participated in any specialized spill response training exercises.

If the NFHC does purchase equipment to be stored and maintained by CCG at Sea Island, the potential for two specialized equipment depots exists.

4.0 CONTINGENCY FUNDING

A major stumbling block for the EEA as well as government agencies in detailing expectations and potential countermeasures responsibilities is that of adequate compensation for the agencies that do respond. Cost-recovery is time consuming and uncertain. This sometimes results in delayed response, inter-agency arguments, poorly handled cleanup and unnecessary environmental impacts. The scope of this problem reaches far beyond the estuary. It is of national significance. The recently released Brander-Smith report (*Protecting Our Waters: Public Review Panel on Tanker Safety and Marine Spills Response Capabilities*) recommends the establishment of a super-fund. The money would be raised through levies on vessels transporting oil or chemicals. This recommendation is not a solution to the problem; especially as it applies to the estuary. A Maritime Pollution Claims Fund exists but thus far no significant amount of it has gone towards spill response or cleanup. The fund would likely only be available for mystery spills or major spills. This does not address the problem of smaller to medium sized spills especially with respect to establishing a predictable and dependable response in all municipalities. The discussion paper recommends a consultants study into the problem.

As a result of budget constraints within FREMP the activity groups were encouraged to obtain what information they could from studies being conducted elsewhere. In 1987, the Canadian Council of Resource and Environment Ministers (CCREM now CCME) began a study into funding cleanup of polluted areas. In November 1987, the EEA decided not to duplicate effort and that the scope of the CCREM study would likely address the problem. However, in February 1988 it was learned that the CCREM Study was only concerned with the cleanup of hazardous waste sites and that the scope did not include spills. Other studies were already underway for the EEA and their yearly budget had been set. Consequently, item (2f) was dropped from the EEA terms of reference.

The subject of contingency funding remains a serious problem. To date, no solution that could be applicable to the estuary has been suggested.

5.0 DRIFT STUDY

Determining the movement of a spill on or in the water is very important when developing scenarios and potential or actual response strategies. This is especially true for the complex environment of the estuary. Both the response agencies and resource agencies would benefit from this information. The Institute of Ocean Sciences (IOS) has developed a model that applies to the estuary and work is continuing to improve the accuracy and reliability of the model. As trajectory modelling is one of the priority recommendations of the Brander - Smith inquiry, it is anticipated that the work of IOS in this endeavour will continue to be supported.

6.0 ENVIRONMENTAL PROTECTION GUIDELINES

In March 1988 the lack of comprehensive environmental protection guidelines for the estuary was noted. The FRHC and Environmental Protection have produced a Countermeasures Manual for the FRHC area of the river. It identifies sensitive areas and recommends protection techniques; work in this area is being conducted by the NFHC and Trans Mountain Pipelines. The need for comprehensive environmental protection guidelines for the estuary as a whole remains. If defensive action is a significant part of spill response, it is important to establish protection priorities and with suitable methods to do so. Furthermore, establishment of the level of threat to particular environments that specific actions or specific commodities may entail will help determine whether the risk is acceptable.

7.0 CURRENT INITIATIVES

This section describes the initiatives that the agencies involved (either directly or indirectly) with the EEA are currently undertaking.

7.1 Environment Canada

There have been two initiatives at a national level which have consumed much of the attention and energy in emergency and environmental planning. The first is the Brander-Smith Report. As individual agencies and the federal government determine a plan of action for the recommendations in that report, the fate and responsibilities of the Environmental Emergency Branch of Environment Canada will be decided. This will have an impact on any revised interagency agreements. The second is Canada's Green Plan. Recommendations from the Brander - Smith inquiry have been incorporated in the environmental emergencies chapter of the Green Plan.

Within FREMP, Environment Canada has improved liaison with the FRHC and is currently working towards improved liaison with the NFHC.

7.2 Ministry of Environment (B.C.)

The B.C. Ministry of Environment developed an Emergency Services Branch and a Marine Oil Spill Contingency Plan in late 1990. The Waste Management Branch of this ministry is now only responsible for disposal of oil, oily debris and hazardous wastes during spill response. The Emergency Services Section will be responsible for shoreline cleanup and deployment of the Environment Youth Corps. MOE has developed three regional response teams with some equipment and training. The Marine Oil Spill Contingency Plan states that the Ministry will be pursuing new agreements with their federal counterparts. No special attention had been given to the Fraser River Estuary.

These activities indicate the province is taking a greater interest in oil spill response. This is further evidenced by the commissioning and release of the Report to the Premier on Oil Transportation and Oil Spills, by David Anderson (1990) and by the release of the report by the B.C. States Task Force (1990).

7.3 Department of Fisheries and Oceans (DFO)

The DFO revised their emergency response plan in 1990 and is studying the possibility of further upgrades. DFO is also considering training. It is likely that DFO will also be affected by implementation of the Green Plan. Whether this has any impact on emergency planning and response in the Fraser River Estuary remains to be seen.

7.4 Fraser River Harbour Commission

Beyond obtaining an equipment trailer, the FRHC is also participating in training exercises for the use of this equipment. Furthermore, the FRHC has developed a five year environmental audit program where each of the FRHC tenants will have to undergo an environmental review and audit. The FRHC is encouraging their terminal operators to develop comprehensive contingency plans. In consultation with the fire departments and Burrard Clean, FRHC is developing checklists for fuel transfer procedures, shipboard operations and terminal operations.

7.5 North Fraser Harbour Commission

The NFHC has taken on an increased surveillance role. They have a trained patrol service 7 days/week, 16 hours/day from May to October. The NFHC is also currently developing a Geographic Information System (GIS) which is planned to include spill modelling, a database, and environmental sensitivities.

7.6 Canadian Coast Guard

The CCG will be affected by whatever actions are taken as a result of the Brander-Smith report. There are plans to improve the process which establishes local spending authority for spill response.

7.7 Burrard Clean/ Canadian Council of Petroleum Industries

The CCPI has developed fuel transfer procedures with the FRHC. They have also participated in training exercises with the FRHC and are signing an agreement on mutual aid.

8.0 DISCUSSION/ CONCLUSION

This section identifies the accomplishments of the EEA. It is important not to judge the activity by the production of an estuary wide emergency response plan. The goal was optimistic given the state of interagency agreements, lack of equipment and protection guidelines. Furthermore, since the inception of the activity, work on the topic of oil spills (and spills of hazardous materials in general) has been accelerating. The structure of response is being studied and is changing both provincially and nationally. Instead of simply organizing the basics for adequate preparedness into a contingency plan the work group found itself having to re-examine these basics and in some cases start from first principles. Thus this section will examine the individual initiatives in turn in order to make an assessment and recommendations.

8.1 Interagency Agreements and Linkages

The initiative to redraft interagency agreements specifying municipal involvement did not result in any new formal agreements. At the time this initiative was taken up a new interagency agreement was not seen as being necessary by all the agencies involved. Since that time there have been considerable reorganization within responding agencies. The need for redrafting or at least clarifying specific agency roles has been identified as a priority in many studies (Brander-Smith, B.C. States Task Force, Anderson) as well as in the Emergency Plan Review and Linkage Study. Furthermore, B.C. MOE and Environment Canada are currently pursuing a new interagency agreement.

In terms of estuary management, informal agreements or understandings should be developed immediately. These agreements must state specific expectations and responsibilities and provide a mechanism for cost recovery. This is especially true in terms of municipal response.

8.2 Dedicated Spill Response Equipment for the Fraser River Estuary

The EEA had set a goal of establishing an estuary spill response cooperative and equipment depot. The FRHC and CCPI (Burrard Clean) have each established a cache at Annacis Island. The NFHC is currently relying on the CCG for response equipment. However, if current negotiations are fulfilled the NFHC could be instrumental in establishing an

improved cache at Sea Island. FREMP should encourage these negotiations to ensure that they are successful. If equipment is obtained, one significant step in the process of preparedness will have been taken.

8.3 Cost Recovery and Contingency Funding

This topic was dropped from the EEA's TOR. Thus far the problem remains unsolved. The problem must be addressed if any interagency agreements are to be meaningful. The scope of the problem is much broader than the FREMP mandate. However, once again FREMP can and should contribute to the solution. To use the estuary as a microcosm may help to define the limits and may help to test solutions used elsewhere.

8.4 Environmental Sensitivities and Modelling

Two studies were suggested in proposals by the working group:

- a drift study of the Fraser Estuary that would help responders predict the dispersion of spills; and
- a study into better waste management practices at marinas in the estuary.

The drift study has been carried through to its present level of development by the IOS while a Marina Task Force is addressing problems at small craft harbours. Both endeavours will contribute to FREMP's goals and the good of the Fraser Estuary.

9.0 RECOMMENDATIONS

This section summarizes recommendations made in the previous section as well as list others which have not been addressed over the course of the activity but have relevance. Recommendations are made under four headings: Planning, Response Preparedness, Public Involvement and General.

9.1 Planning

- Formal and informal agreements should be established defining specific agency responsibilities and expectations.
- FREMP should participate in any negotiations at national or provincial levels which redefine agency responsibilities as this will have impacts any informal agreements or understandings already established. The example of the estuary may be used as a guide in these negotiations.
- The problem of contingency funding must be examined. While the solution would go far past the mandate of FREMP, FREMP can still contribute to a study.
- The specific impacts which the transport of hazardous goods pose to the estuary should be examined. A risk/hazard assessment would establish acceptable volumes of liquids and suitable times of year for such transport.
- Estuary wide simulation exercises should be established to test response mechanisms. Industry and public participation should be encouraged.
- FREMP should examine contingency planning and plan monitoring guidelines used elsewhere and make them available to agencies and industry on the estuary.

9.2 Response Preparedness

- FREMP should encourage negotiations between NFHC and the CCG to ensure their success.

- The NFHC and FRHC should participate in and sponsor training exercises with the river based equipment. Both commissions should sponsor joint exercises which include other agencies as well.

9.3 Public Involvement

- A permanent committee on emergency preparedness should be established to address the following:
 - 1) a public information program on environmental emergency management;
 - 2) large scale simulation exercises which would include public participation; and
 - 3) public events such as the Fraser Festival to demonstrate spill response preparedness.

9.4 General

- The activity should continue. A new agenda should be developed which includes planning for yearly reports on the state of emergency planning on the estuary.
- Commitment for participation on the activity should be sought from the agencies involved to ensure that any particular agency's representative has sufficient time to devote to the activity.

APPENDIX 1

EMERGENCY MANAGEMENT ACTIVITY

TERMS OF REFERENCE

Objectives:

1. To be able to respond to natural and man induced emergencies in a coordinated, efficient manner.
2. To prepare a coordinated emergency management program incorporating the following features:
 - goals and objectives;
 - emergency liaison procedures and contacts;
 - emergency equipment resource inventory;
 - roles and responsibilities;
 - local emergency plans and agreements; and
 - financial assistance arrangements.

Component Tasks:

1. Description and analysis of existing emergency measures.
2. Preparation of emergency management program to coordinate existing measures and correct deficiencies.
3. Other tasks to be identified:

Suggested Work Group Membership:

Environment Canada, Ministry of Environment, Municipalities
Harbour Commissions, Transport Canada, and other support agencies or user
interests as needed.

APPENDIX 2

LIST OF INDIVIDUALS INTERVIEWED

LIST OF LITERATURE REVIEWED

Persons Interviewed

El Adams	The Corporation of Delta
Fred Beech	Environment Canada, Chairperson
George Colquhoun	North Fraser Harbour Commission
Al Domaas	Fraser River Harbour Commission
Mike Flynn	Department of Fisheries and Oceans
Martyn Green	Burrard Clean/ Canadian Council of Petroleum Industries
Colin Hendry	Canadian Coast Guard
Ernie Lawson	Waste Management Branch, B.C. Ministry of Environment
Mike McPhee	Fraser River Estuary Management Program
Dean Monterey	Environmental Emergency Services Branch
Doug Roberts	City of Vancouver
Ian Robertson	Bennett Environmental Consultants/ Gartner Lee
L. Solsberg	Counterspil Research Inc.

Literature Reviewed

Anderson, 1989. Report to the Premier on Oil Transportation and Oil Spills

B.C./States Task Force, 1990. Final Report.

Brander-Smith, Therrien, Tobin, 1990. Protecting Our Waters, Public Review Panel on Tanker Safety and Marine Spills Response Capability.

Fraser River Estuary Management Program Review Committee, 1984. An Implementation Strategy for the FREMP.

Report of the Environmental Assessment Panel, March 1989. Sea Island Fuel Barge Facility.

Robertson, 1990. Emergency Plan Review and Linkage Study, for FREMP Environmental Emergency Management Activity.

Solsberg 1988. Spill Response Equipment Recommendations and Training Requirements for the Lower Fraser River, for FREMP Environmental Emergency Activity.

FREMP Environmental Emergency Management Activity, 1990. Discussion Paper.

FREMP Environmental Emergency Management Activity, 1986 - 1990. Correspondence of Members.

APPENDIX 3

CHRONOLOGY OF PROGRESS OF FREMP EMERGENCY MANAGEMENT ACTIVITY

CHRONOLOGY OF PROGRESS OF FREMP EMERGENCY MANAGEMENT ACTIVITY

DATE	EMERGENCY MANAGEMENT ACTIVITY	COMMENTS
MARCH 1984	Implementation Strategy for the Fraser River Estuary Management Program is published defining the Emergency Management Activity Terms of Reference (Appendix 1)	
1985	Work Group formed - Environment Canada will chair the group.	
JUNE 1986	- FREMP and PEP agree on division of Emergency Management Activity into two groups, one to discuss civil emergencies (chaired by PEP) the other to discuss environmental emergencies, EEA (chaired by EPS) "Options Paper" proposes a single environmental emergency contingency plan for the Estuary - proposal established as an objective for activity - plan to be developed from a discussion paper outlining a new "lead agency agreement"	- contingency plan never completed but many essential basic elements developed - discussion paper completed May 1987
JULY 1986	FREMP agrees to restructuring of Emergency Management Activity - asks EEA to group to identify: - specific areas in the Fraser sensitive to spills (oil and chemical) and, - the options and capabilities for protecting these areas.	
OCTOBER 1986	Discussion Paper draft is sent out for comment from activity group members.	
JANUARY to APRIL 1987	Activity group members submit comments.	
MAY 1987	Discussion Paper finalized submitted to FREMP Management Committee including a work plan and recommendations. - Activities: - Preparation of civil emergencies discussion paper - meetings of REPC for municipal response to discussion paper - preparation of full public workshop - initiation of consultants studies - Recommendations: - study is required to investigate funding in other jurisdictions and make recommendations for the Estuary <u>Spill Countermeasures Enhancement Feasibility Study</u> is required to: determine what type of equipment is appropriate for the river, design a training program for its use, and plan an exercise to be held once the equipment is in place <u>Fraser River Estuary Contingency Plan</u>: other tasks on working plan must be completed before a contingency plan can be attempted, therefore wait one year.	- civil emergencies discussion paper never submitted, working groups developing outside of FREMP - no public workshops took place - funding study not pursued because of CCREM study, eventually dropped from TOR, CCREM study never addressed question - equipment study completed
SEPTEMBER 1987	Work plan updated including work to address: - improvement of government response procedures - development of improved equipment resources - identification of contingency funding mechanisms	contingency plan never achieved but many "basics" established - including linkage study

NOVEMBER 1987

- Decision is made to delay work on intergovernment agreements due to PEP and WMB reorganization
- Decision is made to delay investigation into contingency funding until results of CCREM study are known.

• no new intergovernment agreement was developed, however there has been progress on this issue outside of FREMP

DECEMBER 1987

- Summary of Discussion Paper distributed.
- Equipment study authorized.
- Necessity of developing an area wide contingency plan is brought back into question.

• drift study never approved but IOS work is ongoing

• linkage study completed

JANUARY 1988

Proposals received for equipment study

FEBRUARY 1988

Work plan updated:

- equipment study underway
- river based spill response cooperative still being pursued
- training course with new equipment for government and industry proposed
- a drift study proposed
- results from CCREM study do not address problem of contingency funding for spill cleanup - proposal to drop item 2f from TOR
- no progress on interagency agreements - proposal to engage a consultant to analyze all current contingency plans and assess linkages with "a view to clarifying and coordinating each of the members roles in response"

• the need for site specific environmental protection guidelines remains

• FRHC and CCPI have both established spill response equipment packages at Annacis Island - cooperative never established, but CCG and CCPI upgraded their own packages, FRHC acquired a package, and NFHC is currently negotiating with CCG

MARCH 1988

- Report entitled: Spill Response Equipment Recommendations for the Lower Fraser River presented.
- lack of environmental protection guidelines noted

December 22, 1988 oil spill from barge *Nantux* occurs, causing largest cleanup operation on Canadian West Coast and leading to two provincial inquiries: Anderson 1990 and B.C./States Task Force 1990

MAY 1988

- CCG, FRHC, NFHC, and BCPA (now CCPI) asked to participate in Fraser River Spill Equipment Cooperative.
- contingency planning and environmental guidelines studies approved, drift study not approved, training delayed until equipment package could be put in place.

March 24, 1989 oil spill from *Exxon Valdez*, largest oil spill in North America, direct result was global attention to oil spills, numerous inquiries including the Brander - Smith inquiry

JULY 1988

- CCG states the likelihood that the equipment package at Sea Island will be expanded to include river boom.
- It is suggested that FRHC and NFHC jointly fund and maintain a pollution control facility at Annacis Island.

AUGUST 1988

- FRHC commits to funding a spill response package at Annacis.

OCTOBER 1988

- BCPA (CCPI) declines participation in a cooperative but does locate a response package on Annacis Island.

APRIL 1989

EMERGENCY PLAN REVIEW AND LINKAGE STUDY presented.

DECEMBER 1990

Overview study initiated.